# PUBLIC INTEREST ENERGY RESEARCH ENVIRONMENTALLY PREFERRED ADVANCED GENERATION (EPAG) PROGRAM AREA

# GRANT SOLICITATION AND APPLICATION PACKAGE

## PON-08-005

## Combined Heat and Power and Combined Cooling, Heating, and Power Systems

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# *GRANT SOLICITATION AND APPLICATION PACKAGE*

## Public Interest Energy Research
## Environmentally Preferred Advanced Generation

## Combined Heat and Power and Combined Cooling, Heating, and Power Systems

**1. Release Date:** December 10, 2008

**2. Proposal Due Date:** March 19, 2009 at 4:00 p.m.

### 3. Purpose of Solicitation

This is a competitive grant solicitation sponsored by the California Energy Commission's (Energy Commission) Public Interest Energy Research (PIER) Program. The purpose is to fund research, development, and demonstration (RD&D) projects that will advance the science, technology, and market penetration in California of grid-connected, Combined Heat and Power (CHP) systems (including Combined Cooling, Heating and Power [CCHP] systems), which are closely integrated with prime movers (for example: engines, turbines, and fuel cells).

The PIER Program is releasing this solicitation to support RD&D projects in the research subject area of Environmentally Preferred Advanced Generation. The intent of funding in this area is to improve the performance and advance the market penetration of CHP and CCHP systems in California with the broad objectives of increasing efficiency; reducing cost; reducing emissions (including greenhouse gases); and improving the load factors and operational flexibility of integrated systems used in residential, commercial, and industrial applications for electricity generation, space conditioning, and process heating and/or cooling. The Energy Commission is now requesting proposals in order to select projects for possible funding.

### 4. Availability of Solicitation Documents and Information

This solicitation and all supporting documents and forms can be found at www.energy.ca.gov/contracts/index.html under "Current Solicitations." Interested parties may also register on the electronic mailing list on this webpage to receive notifications of any changes to this solicitation.

For those parties without internet access, copies of solicitation documents and information can be obtained by contacting:

Mr. John Mathias
Energy Generation Research Office
California Energy Commission
1516 Ninth Street, MS-47
Sacramento, CA 95814
Telephone: (916) 651-9525
Email: jmathias@energy.state.ca.us

In addition, you may request to be added to the mailing notification list to receive changes made to this solicitation.

## 5. Legislative / Policy Background

The PIER Program, administered by the Energy Commission, funds selected RD&D efforts that advance energy science or technology that is not adequately addressed by the competitive and regulated energy markets. PIER's mission is to conduct public interest energy RD&D that improves the quality of life for Californians by providing environmentally-sound, safe, reliable and affordable energy services and products. Detailed information about the PIER program can be found on the Energy Commission website at www.energy.ca.gov/research/index.html. The PIER annual report provides information on past projects funded by the PIER Program. Past annual reports can be accessed at www.energy.ca.gov/research/annual_reports.html.

This solicitation supports existing California legislation and programs, including:

- AB 1613 (Blakesley, Statutes of 2007), the Waste Heat and Carbon Emissions Reduction Act, seeks to support and facilitate both customer- and utility-owned CHP systems. The act gives the California Public Utilities Commission permission to require an electrical corporation to purchase excess electricity delivered by a CHP system that complies with certain sizing, energy efficiency and air pollution control requirements. The Act requires that the Energy Commission, by January 1, 2010, adopt guidelines for qualifying CHP systems such that waste energy is reduced; systems are sized to meet the site's thermal load; systems operate continuously in a manner that meet the expected thermal load; and systems are cost-effective, technologically feasible, and environmentally beneficial.

- SB 1250 (Perata), Chapter 512, Statutes of 2006, which states, in part:

  "The general goal of the [Public Interest Energy Research] program is to develop, and help bring to market, energy technologies that provide increased environmental benefits, greater system reliability, and lower system costs, and that provide tangible benefits to electric utility customers through …

- Advanced electricity generation technologies that exceed applicable standards to increase reductions in greenhouse gas emissions from electricity generation, and that benefit electric utility customers.

- Advanced electricity technologies that reduce or eliminate consumption of … finite resources …"

➢ Assembly Bill 32 (Nuñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, landmark legislation for reducing greenhouse gas emissions. The California Air Resource Board (ARB) October 2008 *Climate Change Proposed Scoping Plan* includes increasing CHP electricity production by 30,000 GWh by 2020 as one of the greenhouse gas reduction measures. The report is available at www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.pdf

## 6. General Problem Statement

The Energy Commission's *2005 Integrated Energy Policy Report (IEPR)* www.energy.ca.gov/2005_energypolicy recognizes CHP as an end use efficiency measure for commercial, industrial and institutional facilities. Since 2003, California's energy policy has defined energy efficiency as first in the loading order of resource additions to meet the state's growing electricity demand. Therefore, if considered as an energy efficiency measure, CHP becomes a preferred resource in California's loading order for meeting electricity demand. The *2005 IEPR* identified the potential for "as high as 5,400 MW" of additional CHP capacity by 2020; however, capacity additions of CHP/CCHP systems are falling short of meeting this potential. In 2006, only 56 MW of capacity were installed under the Self-Generation Incentive Program (SGIP), and 234 MW were installed under the SGIP from 2001 through 2006.

The general problem that this solicitation seeks to address is the slow penetration of new CHP/CCHP installations in California. Applicants are expected to narrow the General Problem to a specific problem.

## 7. Funding Information

The estimated total funding available for this solicitation is $3,800,000 of fiscal year 2008-2009 PIER Electricity funds. The maximum PIER funding to be awarded for any one proposal is $1,500,000. It is anticipated that three to five projects will be selected for funding, which will be awarded as grants.

Match funding is expected and should be appropriate and consistent with the expected level of public versus private benefits accrued from the project. In general, the more private benefits accrued the greater match share percentage that should be contributed towards the project. The Energy Commission will evaluate and score the level of match share funding in accordance with the Scoring Criteria in **Attachment A**.

Only those proposals that meet the eligibility requirements and receive at least the minimum technical score will be considered for funding.

## 8. Eligible Projects

To be eligible for funding, the project must advance the science, technology, and market penetration in California of grid-connected CHP and/or CCHP systems, and the project must address technical and/or economic barriers to the market acceptance of grid-connected CHP and CCHP systems in California.

Areas for potential technological development include but are not limited to the following:

- Reducing capital costs, installation costs, and/or operation and maintenance costs of CHP/CCHP systems.
- Improving CHP/CCHP system electrical and/or thermal utilization efficiency.
- Advancing technologies that enable CHP/CCHP systems to exceed applicable standards for reducing greenhouse gas emissions.
- Matching CHP/CCHP system electric and thermal output to facility needs, which may vary over time, so that high CHP/CCHP system efficiency can be maintained continuously.
- Improving load following capability and operational flexibility.
- Improving physical, thermal, and electrical integration among CHP/CCHP system components.
- Improving the efficiency of thermally activated cooling systems that are part of integrated CCHP systems.
- Adapting CHP/CCHP systems to use otherwise wasted fuels and flare gases as system fuels.
- Advancing district heating and cooling system applications.

## 9. Eligible Applicants

This is an open solicitation and all types of organizations are eligible to apply. Proposals submitted under this solicitation may request funding only for new projects or new tasks associated with existing projects. Funds may not be used to augment activities currently funded under existing PIER agreements.

California business entities as well as non-California business entities conducting intrastate business in California are required to register and be in good standing with the California Secretary of State to enter into an Agreement with the Energy Commission. If not currently registered with the California Secretary of State, Applicants are encouraged to contact the Secretary of State's Office as soon as possible to avoid potential delays in beginning the proposed project (should the proposal be successful). For more information, contact the Secretary of State's Office via their website at www.sos.ca.gov.

## 10. Payment of Prevailing Wage

Some projects under this solicitation might be considered public works pursuant to the California Labor Code. If the project is a public work, prevailing wage is required. The California Department of Industrial Relations (DIR) has jurisdiction to decide whether a particular project is or is not a public work. If the proposed project involves construction, alteration, demolition, installation, repair or maintenance work, it probably would be considered by DIR to be a public work. A few of the activities that would probably lead DIR to find that the project involves public works include: cement work; site preparation such as grading; surveying; electrical work such as wiring; and carpentry work. Certain workers are entitled to prevailing wage, such as operating engineers, surveyors, carpenters, laborers, etc. However, other trades are not entitled to prevailing wage, such as engineers and project superintendents.

Applicants are encouraged to determine if the proposed project involves public works as soon as possible. In order to determine if the proposed project involves public works, Applicants will need to contact DIR. If the Applicant is unsure whether the proposed project involves public works, the proposed budget must provide for the payment of prevailing wages. Please indicate whether the proposed budget includes prevailing wage.

If the proposed project is a public work, DIR maintains a list of covered trades and the applicable prevailing wage. The grant agreement will include the requirements for a public works project, such as paying prevailing wage, keeping payroll records, complying with working hour requirements, and apprenticeship obligations. See the sample terms and conditions, the Special Condition regarding Prevailing Wage, and the accompanying forms for more information.

For detailed information about prevailing wage and the process to determine if the proposed project is a public work, see **Attachment J**.

## 11. California Environmental Quality Act (CEQA)

Some of the projects selected for funding may meet the definition of a “project” for purposes of CEQA (see Public Resources Code section 21000 et seq.) If this occurs, the Energy Commission’s Legal Staff will review the projects to determine whether an exemption applies that would prevent further actions under CEQA. If no exemption applies, certain CEQA requirements (e.g., preparation of a negative declaration or environmental impact report) will have to be met prior to the Energy Commission approving the grant. The applicant will have to pay the cost for these activities. Please refer to Title 20, California Code of Regulations, Chapter 6, Article 1, including section 2308.

## 12. Selection of Projects and Award Process

The following process will be utilized to recommend projects for funding:

A. Proposals may be reviewed, on a confidential basis, by technical experts within or outside the Energy Commission.

B. A Scoring Committee will score the proposals using the criteria described in **Attachment A**, taking into consideration the comments of reviewers.

C. During proposal evaluation, the Energy Commission reserves the right to invite Applicants to a clarification interview for their submitted proposals. An Applicant, if invited by Energy Commission staff, may appear in person at the Energy Commission office or discuss the proposal by telephone. The Energy Commission will provide no reimbursement to any Applicant for the interview appearance.

D. A minimum score of 70% is required for funding. Additional scoring information is in **Attachment A**.

E. Those projects receiving at least the minimum score will be ranked according to their overall score.

F. Projects obtaining at least the minimum score will be recommended for funding, starting with the highest ranked project. The Energy Commission reserves the right to determine the number of projects to be funded.

G. A Notice of Proposed Awards will be released.

H. The Energy Commission reserves the right to negotiate with an Applicant to modify the project scope, the level of funding, scope of work, schedule, product description, or budget.

I. If the Energy Commission is unable to successfully negotiate and execute a funding agreement with an Applicant, the Energy Commission, at its sole discretion, reserves the right to cancel the pending award and fund the next highest ranked eligible proposal received under this solicitation.

J. A scope of work, budget, and special conditions will be finalized with the proposed grant recipient.

K. The finalized Grant Agreement, which includes applicable Terms and Conditions*, will be written and sent to the grant recipient for review, approval, and signature.

L. The Energy Commission will fully execute the Grant Agreement only after the Recipient has signed the agreement and following approval at an Energy Commission Business Meeting. Recipients are approved to begin the project only after the date of the full and final execution of the Grant Agreement.

* *PIER Grant Terms and Conditions are posted at www.energy.ca.gov/contracts/pier.html as part of this solicitation package. The Energy Commission reserves the right to modify these Terms and Conditions prior to executing Grant Agreements.*

## 13. Schedule of Proposal and Award Process

| | |
|---|---|
| Release of Program Opportunity Notice | December 10, 2008 |
| Pre-Proposal Workshop<br>Hearing Room B<br>California Energy Commission<br>1516 Ninth St, Sacramento, CA 95814 | January 7, 2009 |
| Post Workshop Summary to Website | January 21, 2009 |
| Deadline to Submit Written Questions | February 4, 2009 |
| Post Questions and Answers to Website (estimated) | February 18, 2009 |
| **Deadline to Submit Proposals** | **March 19, 2009<br>4:00 p.m.** |
| Interview Applicants (if necessary) | May 2009 |
| Post Notice of Proposed Awards (estimated) | July 2009 |
| Approval of Awards at Energy Commission Business Meeting (estimated) | September 2009 |

## 14. Proposal Requirements

Proposals must contain the following elements. ***Failure to include these elements MAY result in the proposal receiving a lower overall score and/or MAY result in your proposal being rejected and not eligible for funding.***

A. Proposal Cover Page. Applicants must complete and submit **Attachment D**, Proposal Cover Page Template. On the original, include the signature of the authorized representative of your organization.

B. Abstract/Summary (one page maximum). The abstract/summary should include the title; brief project description; the energy problem being addressed by the project; and quantitative, measurable goals to be achieved by the end of the project.

C. Project Narrative. The Project Narrative should contain the following:

- A discussion/explanation responding to and addressing each of the scoring criteria described in **Attachment A**.
- Project budget information, including a discussion of the sources and types (cash or in-kind) of match funding, a justification for the share of match funding, and the reasons why this project is not likely to be funded by competitive or regulated markets.
- Complete diagrams of the technology as it would be integrated into a marketable system.
- *For projects that include performance testing or demonstration of a CHP/CCHP system* (e.g., laboratory testing of the prime mover and heat

recovery components of a packaged CHP system using artificial loads, or the field demonstration of a complete CHP/CCHP system connected to actual thermal and electric loads), proposals must include a Process Flow Diagram showing full-load temperatures, mass flows, and energy flows into and out of the system components, and into and out of the system boundary. Include text that identifies the components; identifies components that are the focus of development in this project with anticipated parameter improvements; and discusses any special considerations for startup or part load operation. Provide the LHV fuel-to-electricity conversion efficiency of the prime mover as a function of electricity output either in a graph or a table. Guidance for satisfying this proposal requirement can be found at www.dgdata.org. In particular, please see *CHP Thermal Performance*.

D. A Scope of Work with a task-by-task description of the proposed project. Applicants must use the Scope of Work Template specified in **Attachment E**. **Attachment F** contains the instructions necessary to fill out the Scope of Work template. Additional Scope of Work requirements follow:

- The Scope of Work must include a task for Technology Transfer Activities. Budget for time and travel expenses for meetings and presentations.

- The Scope of Work must include a task for completion of a Commercialization Readiness Plan. Describe how the product(s) will reach the marketplace if the project is successful, and the roles of other organizations involved in commercialization, if appropriate (see Scoring Criterion 8). As part of the Final Report, Recipients will be required to update the Commercialization Readiness Plan and estimate the public benefits resulting from commercialization of the product(s) based on circumstances at that time, including technical advances made in the project, technical developments made by others outside the project, and market and regulatory conditions.

E. A one-page Gantt chart showing the duration and sequencing of the tasks, starting with the date that funding is awarded.

F. Short biographies for the Project Manager/Principal Investigator and key project partners (individuals in your organization or subcontractors), emphasizing experience related to the activities to be performed in this project.

G. Schedule of Products and Due Dates. Applicants shall complete and submit a Schedule of Products and Due Dates using the template contained in **Attachment G**. The Schedule of Products and Due Dates template is an Excel workbook that is posted on the Energy Commission website at www.energy.ca.gov/contracts as part of this solicitation package.

H. Budget. Applicants shall complete and submit the budget spreadsheets using the templates contained in **Attachment H**. The Microsoft Excel template includes five worksheets: (1) Summary Category Budget; (2) Budget Details; (3) Summary Task Budget; (4) PIER Funding by Task; and (5) Match Funding by Task. The budget template is an Excel workbook that is posted on the Energy Commission website at www.energy.ca.gov/contracts as part of this solicitation package.

The budget should allow for expenses for Administrative Activities, which include:

- Kick-off Meeting for the Project Manager and Grant Administrator at the Energy Commission in Sacramento, CA.
- At least one Critical Project Review Meeting per year for the Project Manager. For budgeting purposes, assume the meetings will be held at the Energy Commission.
- A Final Meeting at the Energy Commission for the Project Manager and other key technical staff, as appropriate.
- Monthly Progress Reports (2-4 pages each) during the approved term of the agreement.
- Final Report Outline, Draft Final Report, and Final Report, approved by the Commission Project Manager, which follows Energy Commission guidelines in effect at the time of the preparation of the Final Report Outline. Guidelines can be accessed at www.energy.ca.gov/contracts/pier/contractors/index.html.
- Verification of match funds and permits required to perform the project. PIER will not reimburse any expenses either for identifying and obtaining match funds or for identifying and obtaining required permits.

In preparing the budget for each technical task, include the cost of a draft and final task technical report, to be approved by the Commission Project Manager. If a task includes testing of major components or systems, include the cost of a draft and final test plan, to be approved by the Commission Project Manager. In preparing the task budget, assume that the *Commercialization Readiness Plan* (with Public Benefits analysis) will be approximately 6-12 pages long.

I. California-Based Entity (CBE) Preference Points Questionnaire (optional): Applicants meeting the criteria of a California-Based Entity (CBE) may have preference points added to their final technical score, subject to certain restrictions. Please see Attachment M for more information. Eligible applicants must request and demonstrate eligibility by filling out and submitting as part of the proposal package the questionnaire contained in Attachment N. Otherwise eligible applicants who do NOT submit the Attachment N questionnaire shall NOT be eligible for the CBE Preference Points.

## 15. Proposal Guidelines

Proposals must adhere to the following proposal guidelines. ***Failure to follow these guidelines MAY result in your proposal receiving a lower overall score and/or MAY result in your proposal being rejected.***

A. Please provide one (1) original and eight (8) copies of the proposal and a CD containing all the documents. The documents do not need to be bound; binder clips are acceptable. The original must be signed by an authorized representative of your organization.

B. Limit proposals to a maximum of 50 pages total.

C. Use a standard 12-point font and 1-inch or larger page margins. Insert one blank line between paragraphs. Number the pages.

D. Project duration, from kick-off meeting to the final meeting, cannot exceed four years.

E. All project expenditures (match share and reimbursable) must be expended within the approved term of the funding agreement.

F. Match funding is expected. Although match funding is not required, the source, type and percentage of match funding will be considered in scoring the proposal, with higher percentages being favorably regarded (see the scoring criteria in **Attachment A**). In general, the closer the project product is to commercialization, the higher the percentage of match share funding that should be contributed to the project.The purchase of equipment (items with a unit cost greater than $5,000 and a useful life greater than one year) with PIER funds is discouraged due to disposition requirements associated with the equipment. There are no disposition requirements for equipment purchased with match share funding.

H. The budget must reflect estimates for ***actual*** costs to be incurred during the approved term of the project. The Energy Commission can only approve and reimburse expenditures for actual costs that are properly documented in accordance with the PIER Grant Terms and Conditions.

I. The budget must ***NOT*** include any profit from the proposed project, either as a reimbursed item or as match share. In accordance with the PIER Grant Terms and Conditions, ***NO PROFIT IS ALLOWED UNDER GRANT AGREEMENTS***. Please review the PIER Grant Terms and Conditions for additional restrictions and requirements.

## 16. Confidential Information

No confidential information will be accepted during the proposal and selection phase of this solicitation. If any confidential information is submitted, the entire proposal will be rejected and will not be eligible for funding. Proposals containing confidential information will be returned to the Applicant.

While discouraged, Applicants may ***propose*** to deliver confidential products during the course of the project if funded. If necessary, instructions on submitting confidential products will be provided by the Energy Commission prior to executing the Grant Agreement.

## 17. Grounds for Rejection

Proposals ***WILL*** be rejected and not considered for funding if the proposal:

A. Is not signed by an authorized representative of the Applicant's organization on the paper original.

B. Is not received by the Energy Commission's Grants and Loans Office by the stated due date and time.

C. Contains any confidential information.

D. Requests PIER funding of more than $1,500,000.

Proposals ***MAY*** be rejected and not considered for funding if:

A. The proposal does not address each element listed under "Proposal Requirements."

B. The proposal does not adhere to the guidelines listed under "Proposal Guidelines."

## 18. Pre-Proposal Workshop

Energy Commission staff will conduct a Pre-Proposal Workshop to provide an overview of and answer questions regarding the Grant Solicitation and Application Package. The Pre-Proposal Workshop will be held:

**Wednesday, January 7, 2009**
1:00 p.m. to 3:00 p.m.
California Energy Commission
Hearing Room B, First Floor
1516 Ninth Street
Sacramento, California 95814
(Wheelchair Accessible)

A Webex web conference will be available to enable remote participation in the workshop. Please follow these instructions to participate remotely:

Webex Meeting Number: **924 258 431**
Webex Meeting Password: **meeting@10**

**To participate in the Webex web conference:**

1. Go to https://energy.webex.com/energy/j.php?ED=108451042&UID=0&PW=7858031f1d174503097b5d51
2. Enter your name and email address.
3. Enter the meeting password: meeting@10
4. Click "Join Now".
5. Provide your phone number when you join the meeting to receive a call back.

**To join the teleconference only:**

1. Call the number below and enter the meeting number.
2. Call-in toll-free number (US/Canada): 866-469-3239
3. Call-in toll number (US/Canada): 1-650-429-3300
4. Global call-in numbers: https://energy.webex.com/energy/globalcallin.php?serviceType=MC&ED=108451042&tollFree=1
5. Toll-free dialing restrictions: http://www.webex.com/pdf/tollfree_restrictions.pdf

**For assistance with Webex:**

1. Go to https://energy.webex.com/energy/mc
2. On the left navigation bar, click "Support".

If you have questions about participating in the workshop, please contact John Mathias at jmathias@energy.state.ca.us or (916) 651-9525.

If you have a disability and require assistance to participate, please contact Lou Quiroz at (916) 654-5146 at least five days before the workshop. Please direct all news media inquiries to Susanne Garfield, Assistant Executive Director, at (916) 654-4989.

## 19. Submission Requirements

Proposals must be *received* by the Energy Commission's Grants and Loans Office by **4:00 p.m. on March 19, 2009**. Proposals must be mailed or delivered to:

California Energy Commission
Grants and Loans Office
Attn: PIER-CCHP Grant Solicitation
1516 Ninth Street, MS-1
Sacramento, CA 95814

Postmark dates of mailing, electronic mail (E-mail), and facsimile (Fax) transmissions are not acceptable in whole or in part under any circumstances. The Energy Commission will reject all proposals not received by the Energy Commission's Grants and Loans Office by the stated due date and time.

## 20. Amendment or Cancellation of this Solicitation

The Energy Commission reserves the right to do any of the following:

- Cancel this solicitation.
- Amend or revise this solicitation as needed.
- Reject any or all proposals received in response to this solicitation.

## 21. Questions

Additional questions about this solicitation must be submitted by 4:00 p.m. on February 4, 2009 and may be submitted by email or letter. The questions and answers will be posted on the Energy Commission's website by February 18, 2009. Questions should be directed to:

John Mathias
Energy Generation Research Office
California Energy Commission
1516 Ninth Street, MS-47
Sacramento, CA 95814
Telephone: (916) 651-9525
Email: jmathias@energy.state.ca.us

## 22. Attachments

A. Scoring Criteria
B. ARB Emissions Standards
C. Examples of Previously Funded Pier Projects
D. Proposal Cover Page Template
E. Scope of Work Template
F. Scope of Work Template Instructions
G. Schedule of Products and Due Dates
H. Budget Forms and Instructions
I. Sample PIER Grant Terms and Conditions
J. Prevailing Wage Compliance Questions and Answers
K. Prevailing Wage Special Conditions
L. Prevailing Wage Compliance Certificate
M. California-Based Entity (CBE) Preference Points
N. CBE Preference Points Questionnaire

# ATTACHMENT A

# SCORING CRITERIA

Scoring will be based on the criteria described below. Each criterion will be scored on a basis of 0 to 10 points and then multiplied by the corresponding weighting factor. The resulting scores for the applicable criteria will be summed and then divided by the sum of the maximum possible points to obtain a percentage. A minimum score of 70% will be required to be eligible for funding.

**Preference Points for California-Based Entities**
Applicants meeting the criteria of a California-Based Entity (CBE) may have preference points added to their final technical score, subject to certain restrictions. Please see Attachment M for more information. Eligible applicants must request and demonstrate eligibility by filling out and submitting as part of the proposal package the questionnaire contained in Attachment N. Otherwise eligible applicants who do NOT submit the Attachment N questionnaire shall NOT be eligible for the CBE Preference Points.

**Scoring Table for Scoring Criteria 1 through 10.**

| *Score* | *Response to the Criterion* |
|---|---|
| 0 | Not responsive |
| 1 – 2 | Response is minimal |
| 3 – 4 | Responds only marginally to relevant considerations |
| 5 – 6 | Responds satisfactorily to most relevant considerations |
| 7 – 8 | Responds satisfactorily to all relevant considerations |
| 9 | Responds completely, accurately, and convincingly to all relevant considerations |
| 10 | Response is complete, specific and superior, both quantitatively and qualitatively |

## 1. Proposal's Problem Statement

| | |
|---|---|
| Criterion Scoring Range: | 0 - 10 |
| Weighting Factor: | 1.0 |
| Maximum Possible Points: | 10 |

- The most significant technical barriers, knowledge gaps, and deficiencies that impede market penetration of CHP systems in California are identified and described.
- The proposal identifies the specific barriers, knowledge gaps, and technical deficiencies that it will address, expressed in the form of a Problem Statement.
- The proposal's Problem Statement is consistent with the Purpose and General Problem Statement for this solicitation.
- The problem requires an RD&D solution.

## 2. The Current Status of the Subject Technology

Criterion Scoring Range: 0 - 10
Weighting Factor: 1.0
Maximum Possible Points: 10

- The cost and performance of the relevant CHP/CCHP system, materials, components, subsystems, and operational characteristics are completely, clearly and quantitatively described and supported by calculations, experimental data and literature references.
- Past and current work in the subject technology performed by the project team, including successes and failures, are described.
- The market position of the subject technology is completely and quantitatively described.

## 3. Technical Description and Approach of the Proposed RD&D

Criterion Scoring Range: 0 - 10
Weighting Factor: 3.0
Maximum Possible Points: 30

- The proposal describes how the project advances the science and addresses technical issues associated with the performance and operation of grid-connected CHP/CCHP systems.
- The proposal describes how the project addresses economic issues associated with the performance and operation of grid-connected CHP/CCHP systems.
- Evidence – including specifications, data, and calculations – that the CHP/CCHP system has, or will have by a specified date, emissions that satisfy the CARB 2007 emissions standards for Distributed Generation systems (see **Attachment B**). Alternatively, describe why the CHP/CCHP system or technologies being developed in this proposal are exempt from these standards.
- The proposal demonstrates that the Applicant has a thorough understanding of the science, engineering, and manufacturing associated with the proposed technologies and CHP/CCHP subsystems/systems.
- The specific issue(s) or barrier(s) to the market acceptance in California of grid-connected CHP/CCHP systems that the project will address is/are clearly and completely described.
- The proposal describes how the project will improve the market penetration of grid-connected CHP/CCHP systems in California.
- The Process Flow Diagram for the CHP/CCHP system shows temperatures, mass flows, and energy flows into and out of the system components, and into and out of the system boundary, when the system is operating at full load. The components are identified.

## 4. Cost and Technical Performance Goals

Criterion Scoring Range: 0 - 10
Weighting Factor: 1.5

Maximum Possible Points: 15

- The cost and performance improvement goals to be achieved at the end of the project are given in either absolute or percentage terms.
- The methodology to determine if the cost goals have been achieved is described.
- The methodology to determine if the technical performance goals have been achieved is described.
- Public benefits to California electricity customers and stakeholders – residential, academic, commercial, and/or industrial – if the project is successful.
- The impacts of the proposed project on technical barriers that are hindering the penetration of CHP/CCHP systems in California are described and quantified.

**5. Scope of Work**

Criterion Scoring Range: 0 - 10
Weighting Factor: 1.0
Maximum Possible Points: 10

- The Scope of Work follows the template provided both in content and in responsiveness.
- Technical tasks describe specifically what the project team will do during the term of the project.
- The technical tasks are clearly and logically presented, with descriptive titles, appropriate and quantitative task goals and objectives, sequence of activities, and products.
- Appropriate Test Plans, demonstrating how project cost and performance goals will be achieved, are included in the tasks.
- The Gantt chart presents a reasonable schedule for the tasks.
- The project does not exceed 4 years in duration.

**6. California Ratepayer Benefits and Need for PIER Funding**

Criterion Scoring Range: 0 - 10
Weighting Factor: 1.5
Maximum Possible Points: 15

- The proposal is for a project that has not been addressed and is not currently being addressed.
- The proposal describes how the technology, hardware, or system to be developed will satisfy customer needs in ways that cannot be satisfied by currently available technologies, hardware or systems.
- The impacts of the proposed project on market barriers that are hindering the penetration of CHP/CCHP systems in California are described and quantified.

- Public benefits to California utility ratepayers – residential, academic, commercial, institutional and/or industrial – of a commercial product are described and quantified. Public benefits include improved fuel use efficiency, lower costs for electricity, reduced demand for petroleum based fuels, reduced emissions of criteria pollutants, more secure and reliable electricity supply, and reduced peak demand for electricity.
- The proposal shows the project addresses AB 32, the Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety code), requiring California to reduce statewide greenhouse gas emissions to 1990 levels by 2020.
- The quantification of benefits is plausible, both in terms of the type and the amount, based on the ability of the project team to bring technologies to, and penetrate, the market.
- The proposal shows that the anticipated benefits are consistent with the cost, technological and market goals and the commercialization path.
- The proposal includes a detailed explanation of why the proposed project has not been addressed and will not be addressed by competitive or regulated markets.
- The proposal makes a compelling case that the project (not just the Applicant or a Team Member) requires PIER funding and at the amount requested, rather than being funded internally or by competitive or regulated markets.
- Other sources of funding that were sought, especially from team members, are identified.

## 7. Qualifications of Project Manager and Project Team

| | |
|---|---|
| Criterion Scoring Range: | 0 - 10 |
| Weighting Factor: | 1.0 |
| Maximum Possible Points: | 10 |

- The description demonstrates that the project team is qualified to undertake the proposed project.
- The Project Manager and team members have the technical capabilities and specific experience to successfully complete the project.
- The relevant experience and specific roles of the Project Manager and key team members are described.
- The Project Manager can successfully manage the project, control cost, maintain the schedule, and report results and accomplishments in an effective manner.
- The project team has the financial, management, and technical resources to advance the technology to the next stage of development and/or commercialization.
- Past experience in projects resulted in products that were commercialized, or are on a clear path to commercialization (1) in California and (2) elsewhere.

## 8. Market Performance Goals and Commercialization Path

| | |
|---|---|
| Criterion Scoring Range: | 0 - 10 |
| Weighting Factor: | 1.5 |
| Maximum Possible Points: | 15 |

- The system cost and performance improvement goals that need to be achieved for market introduction are given in absolute terms.
- The place of the proposed project in the Commercialization Path – starting with the current status of the technology, continuing through the proposed project, and concluding with additional technology advancement, manufacturing, and market development – is outlined.
- A reasonable path for commercialization of the technology is described.
- Market penetration goals or estimates are reasonable based on technical potential, economic and regulatory conditions, and the commercialization partner's existing or expected market share.
- The proposal includes a tabulation of current cost and relevant performance measures on the date of proposal submittal, at the end of the project, and at the time of market introduction, with a date specified.
- The proposal has a high probability of meeting cost and relevant performance measures at the end of the project based on the Technical Approach and the Scope of Work.

## 9. Project Budget and Cost Effectiveness

| | |
|---|---|
| Criterion Scoring Range: | 0 - 10 |
| Weighting Factor: | 3.0 |
| Maximum Possible Points: | 30 |

- The total project budget is consistent with the work to be performed and the level of expertise required.
- The PIER funding requested is appropriate and consistent with the expected level of public benefit.
- Private benefits of a commercial product are described and quantified.
- The match funding provided is consistent with the expected level of private benefits.The percentage of match funding is appropriate, with higher percentages provided for projects with products close to commercialization.
- The sources of match funding are described and identified as in-kind or cash.
- Each team member has committed match funds to the project.
- The project team has sufficient financial resources to complete the project and meet unexpected delays or lapses in funding.

## 10. Other Significant Factors That Increase the Project's Merit

| | |
|---|---|
| Criterion Scoring Range: | 0 - 10 |
| Weighting Factor: | 0.5 |
| Maximum Possible Points: | 5 |

The proposal must explicitly identify factors that are to be considered by the Scoring Team. These factors must be **beyond** those considered under other Scoring Criteria and beyond those identified in the General Problem Statement for this solicitation.

The following are *examples* of other significant factors that may be considered by the proposal evaluation team:

- The proposal shows that the project supports California energy policies and policy report recommendations, provides a basis for informing future energy policy, or develops cost and performance data that can be used for developing guidelines for CHP systems, as required under AB 1613.
- The project contributes to a balanced PIER portfolio across technology types, levels of risk, and/or time to commercialization. (Applicants should check the PIER Annual Report for descriptions of previous and prior PIER funded projects to assess possible duplication.)
- The project may develop and deploy innovative and pioneering technologies.
- The technology or system to be developed has the potential to open new markets for CHP/CCHP systems. For example, district heating and cooling or integration into microgrids.

# ATTACHMENT B

## CALIFORNIA AIR RESOURCES BOARD JANUARY 1, 2007, FOSSIL FUEL EMISSION STANDARDS FOR CERTIFICATION OF DISTRIBUTED GENERATION / COMBINED HEAT AND POWER (DG/CHP) SYSTEMS

| ***Pollutant*** | ***Emission Standard (lb/MWh) **** |
|---|---|
| Oxides of Nitrogen (NOx) | 0.07 |
| Carbon Monoxide (CO) | 0.10 |
| Volatile Organic Compounds (VOCs) | 0.02 |
| Particulate Matter (PM) | An emission limit corresponding to natural gas with fuel sulfur content of no more than 1 grain/100 scf |

* DG units that use CHP may take a credit to meet the emission standard above. Credit shall be at the rate of one megawatt-hour (MW-hr) for each 3.4 million British Thermal Units (Btus) of heat recovered. To take the credit, both of the following must apply:

(A) DG units are sold with CHP technology integrated into a standardized package by the Applicant; and

(B) CHP units achieve a minimum efficiency of 60 percent (useful energy out/higher heating value [HHV] fuel energy in) in the conversion of the energy in the fossil fuel to electricity and process heat. The efficiency determination shall be based on 100 percent load.

These standards have also been proposed by South Coast Air Quality Management District (SCAQMD) for permitting of all DG systems with a prime mover of less than 1,000 horsepower. Continuous emissions monitoring of these systems is also being proposed.

**Waste Gas (Digester, Landfill, or Oil-field Waste Gas) Emission Standards**

| ***Pollutant*** | ***Emission Standard (lb/MWh)*** | |
|---|---|---|
| | ***January 1, 2008*** | ***January 1, 2013*** |
| NOx | 0.5 | 0.07 |
| CO | 6.0 | 0.10 |
| VOCx | 1.0 | 0.02 |
| PM | - | - |

DG Units that produce combined heat and power may take a credit to meet the January 1, 2013 emission standard above. Credit shall be at the rate of one MW-hr for each 3.4 million Btus of heat recovered. To take the credit, the following must apply:

(1) DG Units are sold with combined heat and power technology integrated into a standardized package by the Applicant; and

(2) DG Units achieve a minimum energy efficiency of 60 percent.

Additional information can be found at http://www.arb.ca.gov/energy/dg/dg.htm.

# ATTACHMENT C

## EXAMPLES OF PREVIOUSLY FUNDED PROJECTS

The Public Interest Energy Research (PIER) Program 2007 Annual Report highlights and summarizes recently funded research, completed projects, and current activities. The report can be found at www.energy.ca.gov/2008publications/CEC-500-2008-026/CEC-500-2008-026-CMF.PDF

Examples of current and recently completed projects include:

- 0.2 Grams Per Brake Horsepower-Hour NOx Natural Gas-Fired Engine
- 331 kWe High Efficiency and Low Emission Engine Using Thermochemical Fuel Reforming
- Carbon Molecular Sieve Membranes
- Operating Gas Engines on Alternative Gas Fuels
- Engine CHP Emission Control Technology
- Stirling Engine with Catalyzed Flow Burner
- Jet Mixing in Rich-Quench-Lean Combustors
- An Integrated Distributed Power System Using a PEM Fuel Cell and an Autothermal Cyclic Reformer
- Laser Based Ignition System for Improved Reciprocating Engine Performance
- Low Cost, High Efficiency, Ultra-Low NOx ARICE Solution Using HCCI Combustion
- Low Emission Advanced Vortex Combustor
- Ultra-Low NOx Supplemental Firing Burner
- Durability of Catalytic Combustion Systems
- Microturbine-based Combined Heat and Power for Thermal Oxidizers
- Microturbine-based Heat and Power Systems
- Intercooled Recuperator Microturbine

- Packaged Microturbine/Boiler Combined Heat and Power System
- Ultra-low Emission Integrated Combined Heat and Power Sensor Technology and Catalyst Development
- Small Scale Dehumidification/Heating Combined Heat and Power System
- Integrated Combined Heat and Power System with Ultra-Low NOx Supplemental Firing

# ATTACHMENT D

## PROPOSAL COVER PAGE TEMPLATE AND INSTRUCTIONS

[The proposal cover page template for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

# ATTACHMENT E

## SCOPE OF WORK TEMPLATE

[The scope of work template for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

# ATTACHMENT F

# SCOPE OF WORK TEMPLATE INSTRUCTIONS

The Scope of Work Template contains the framework to use to complete the Scope of Work. The template has instructions in blue type within < > that are to be deleted as it is filled out. The following are additional instructions for the items in the Scope of Work. At the end of these instructions, there are examples of Technical Tasks to provide guidance in drafting your own.

## I. Technical Task List

Insert the Task numbers and Task names for the project. Put an "X" in the CPR column next to the Tasks that contain a Critical Project Review. Add additional rows as necessary.

## II. Key Name List

List key parties within the agreement as described below. See Terms and Conditions for more information regarding key parties within the agreement.

***Key Personnel*** are employees or consultants who are critical to the outcome of the project and are being paid with PIER funds. Key Personnel have expertise in the project field or experience that is not available from another source. Replacing these individuals may be difficult due to their expertise and may affect the outcome of the project. Since key personnel can come from various organizations working on the agreement, they should be written as follows to avoid confusion: “John Smith – Acme Company”

***Key Subcontractors*** are contractors, subcontractors, or vendors who are critical to the outcome of the project and are being paid with PIER funds. Key Subcontractors have expertise in the project field or experience that is not available from another source. Replacing these individuals may be difficult due to their expertise and may affect the outcome of the project.

***Key Partners*** are participants in the Project who are not receiving PIER funds and are not providing Match Funds but are integral to the outcome of the Project. Key Partners may be providing space, testing facilities, demonstration sites or may be a manufacturer or other implementer of the Project results. Individual key employees from the Key Partner organizations are listed under “Key Personnel.” “Key Partners” are company names.

## III. Glossary

Spell out each acronym used in the Scope of Work. Also include definitions of odd or unusual terms. Think about the document from the perspective of someone who does not work in the particular industry or discipline.

## IV. Problem Statement

Describe the problem that this research will address in one to two paragraphs maximum.

Describe the scientific and technological baseline, that is, the current state-of-the-art or the developmental status of the subject technology to be advanced.

Identify entities engaged in development of the subject technology. Identify whether or not the proposed project duplicates or overlaps with other ongoing RD&D. Emphasize past advances that you have made in areas relevant to the proposed work.

Describe the deficiencies that exist for the subject technology. The deficiencies should illuminate the question of *why* the proposed project should be done.

Identify and discuss the principal barriers, key unresolved issues, and knowledge gaps that hinder the development and widespread use of the resource or the products of the proposed research in California. Barriers may be grouped under the following categories, or other categories that the Applicant deems appropriate:

- Scientific and technological – such as insufficient scientific understanding of relevant phenomena and processes, inadequate data acquisition technologies, low reliability, low power density, low energy density, lack of detailed engineering designs and design trade-off analyses, inadequate component development, high cost of fabrication techniques, insufficient field testing, or insufficient field demonstrations.

- Market – such as inadequate consumer knowledge or limited system supply and maintenance infrastructure.

- Institutional – such as regulatory hurdles (e.g., atmospheric emission limitations) or lack of adopted standards.

- Environmental – such as $H_2S$ emissions, excessive noise, or ground water contamination.

Explain why these barriers have not been addressed by the marketplace or by other institutions.

Explain why the barriers should be addressed at this time. For example, place the proposed work into the context of the spectrum of barriers to widespread deployment and adoption.

## V. Goals of the Agreement

At the beginning of this section, complete the following sentence. Please be succinct.

The goal of this project is to … *<Complete the sentence with a brief description of the goal(s) and how the goal(s) will be met. Goals can be technical, economic or social. Please be brief, two to three sentences maximum.>*

## VI. Objectives of the Agreement

The objectives of this project are to … *<Complete this sentence with the objectives, which are things that will be measurable or knowable at the end of **this** project.>*

If the improvements that your project will make are not amenable to measurement, surrogate performance metrics that can be measured must be given. Describe the methodology or procedure that will be used at the completion of the project to determine if the performance metrics have been achieved.

List and describe technical or economic objectives, or desired conditions outside the project itself that will result from the success of the project.

## VII. Task 1.0 Administration

The administrative tasks must be included in every agreement and, except for Tasks 1.8 and 1.9, the language does not change. Do NOT write anything in these tasks except for Tasks 1.8 and 1.9.

## VIII. Technical Tasks (Tasks 2 through n)

This is the area in the Scope of Work where the technical work to be performed under this Agreement is set forth. The work effort should be divided into a series of logical, discrete and sequential tasks. Each task has the following components:

- Task Name
- The goal of this task is to ...
- The Recipient shall:
- Products

### A. The Goal

The goal of this task is to ... *<Complete the sentence with a brief description of the goal(s). Please be brief, two to three sentences maximum.>*

### B. The Recipient shall …

List each individual **activity** with a separate bullet if there are more than two individual activities and begin each bullet with a verb to complete the sentence beginning with "The Recipient shall." Organize activities in the order in which they will occur. Use this section to describe the essential elements of the process you will use to complete the project. The contents of each product shall also be described in this section.

**For Example:**

**The Recipient shall:**

- Prepare the X Test Plan. This plan shall include, but is not limited to ...
- Submit the X Test Plan to the Commission Project Manager ...
- Conduct research in accordance with the X Test Plan.
- Prepare the X Test Results Report. This report shall include, but is not limited to, the following ...

Please note that if a project is for demonstration, or if a project involves testing, one of the tasks should be Test Plan preparation. The Test Plan should include considerations such as the number of hours of operation, the type of monitoring to be preformed, the manner in which data will be validated, analyzed, and reported.

**C. Products:**

**Product(s):**

- *<Insert 1st product (name only)>*
- *<Insert 2nd product (name only)>*

**Only the names of each product shall appear in the "Products" section. Use exactly the same name to identify a product (report, data set, project plan, etc.) in the activity and in the list of products.**

**Products incorporate the knowledge and understanding gained by performing the activities, and are submitted to the Energy Commission for review, comment and approval. Products include, but are not limited to, written reports that describe methods, test plans, results of testing, analysis of data, conclusions, and recommendations for future study, workshop agendas and summaries, description and photographs of equipment/product developed, summaries of advisory group meetings, computer software with written instructions for data input and use of the software, if intended for public or Energy Commission use, and production prototypes. The summaries of the Products should be sufficiently detailed to be of use to stakeholders and other researchers. The level of detail should be sufficient for an observer to assess whether the project objectives and goals have been successfully met.**

**D. Task n-1 Technology Transfer Activities**

Change the language as appropriate for your project.

**E. Task n Production Readiness Plan**

Change the language as appropriate for your project.

## IX. Examples of Different Types of Technical Products *(These are examples, which you may modify for use in your project. You may create other products as needed, but please adhere to the patterns shown.)*

### 1. Written Notification

- Provide a Written Notification regarding _____, to the Commission Project Manager. *(Give it a unique name based on the content and the project.)* The letter shall include but is not limited to written documentation that the _____ is ready for *(testing, viewing, submission for certification, etc.*) and the date such (*testing, viewing, submission for certification, etc.)* shall begin, and shall include photographs.

**Product:** Written Notification regarding _____

### 2. Test Plans

- Prepare the _____Test Plan. *(Give it a unique name, such as the Site A Test Plan. Test plans and testing procedures should be described in detail including factors such as instrumentation, data collection, data analysis, statistical analyses, and performance curves. Test results shall include relationships among performance, efficiency, emissions, temperature, pressure and all other parameters that qualify and quantify the subject technology.)* The Test Plan shall include, but is not limited to:

  - a description of the process to be tested;
  - the rationale for why the tests are required;
  - predicted performance based on calculations or other analyses;
  - test objectives and technical approach;
  - a test matrix showing the number of test conditions and replicated runs;
  - a description of the facilities, equipment, instrumentation required to conduct the tests;
  - a description of test procedures, including parameters to be controlled and how they will be controlled; parameters to be measured and instrumentation to measure them; calibration procedures to be used; recommended calibration interval; and maintenance of the test log;
  - a description of the data analysis procedures;
  - a description of quality assurance procedures;

- contingency measures to be considered if the test objectives are not met;
- *<add additional bullets specific to the project as needed>*.

**Product(s)**:

- Draft _____ Test Plan
- Final _____ Test Plan

**3. Interim Reports** (*This applies to all product reports. Examples include task and subtask reports, test reports, data sets, databases and computer model development or application. Monthly reports and the final report are treated separately as shown in the Scope of Work.)*

- Prepare the_____ Report *(Give it a unique name, such as the ABC Test Report or 123 Database. If an interim report is based on earlier work in this project, then the titles should relate to each other. After the title insert a description of the product.)* This report shall include, but is not limited to, the following*: (List the elements of the report in separate bullets.)*

For example, if the Interim Report is a Test Report, use the following description:

The Test Report shall include, but is not limited to, the following:

- the Test Plan;
- test results;
- analysis;
- conclusions;
- recommendations;
- photographs as appropriate;
- *<add additional bullets specific to the project as needed>*.

For example, if the Interim Report is a Task or Subtask Report, use the following description:

The Task or Subtask Report shall include, but is not limited to, the following:

- the goal of the task or subtask;
- the description of the approach used;
- list of activities performed;
- description of the results and to what degree the goal was achieved;
- significant issues encountered and how they were addressed;

- a discussion of the implications regarding the success or failure of the results, and the effect on the budget and the overall objectives of the project;
- photographs as appropriate;
- *<add additional bullets specific to the project as needed>*.

**Product(s):**

- Draft _____ Test (Task, Database, etc.) Report
- Final _____ Test (Task, Database, etc.) Report

## 4. Bills of Materials or Equipment Lists

- Prepare a Bill of Materials (or Equipment List) for _____. *(Give it a unique name.).* This document shall include but is not limited to:
  - a description of each item;
  - test protocols and codes applicable to each item;
  - cost estimates or bids for each item.

**Product:** Bill of Materials (or Equipment List) for_____

## 5. Site Selection (optionally, this can be incorporated into a Test Plan)

- Determine Site Selection Details for the field test site, including but not limited to the following, and obtain Commission Project Manager approval:
- Type of site, i.e., <Sites for Wind Energy Storage Projects>
  - Residential
    - Specify type of dwelling: single family, multiple family including number of units, apartment, townhouse, etc.
    - Specify age of dwelling: new home construction, model home, existing home (indicate approximate age)
  - Commercial (specify warehouse, retail, office, etc.) <Sites for Wind Energy Storage Projects>
- Number of sites
- Location, i.e., climate zone, area, or city
- Timing of testing (i.e., season or month), length and frequency of testing
- Agreement with site owner, to address issues such as:
  - Details of test, including dates, length of test
  - Site owner input and feedback on test conditions
  - Access to site
  - Insurance and indemnity
  - Contingency if damages are caused by test
  - Equipment installation and removal

Once the site is selected, Recipient shall enter into an agreement with the site owner and make a copy of the agreement available to the Commission Project Manager upon request.

**Product:** Written Notification of Site Selection

# ATTACHMENT G

## SCHEDULE OF PRODUCTS AND DUE DATES

[The scope of work template for this solicitation is a separate Microsoft Excel document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

# ATTACHMENT H

## BUDGET FORMS AND INSTRUCTIONS

[The budget forms and instructions for this solicitation is a separate Microsoft Excel document that can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

# ATTACHMENT I

## SAMPLE PIER GRANT TERMS AND CONDITIONS

[The sample PIER grant Terms and Conditions is a separate .pdf document that can be accessed at www.energy.ca.gov/contracts as part of this solicitation package. Applicants are encouraged to review these Terms and Conditions to ensure they are acceptable prior to submitting a proposal. The Energy Commission reserves the right to modify these Terms and Conditions prior to issuing grant agreements.]

# ATTACHMENT J

# PREVAILING WAGE COMPLIANCE QUESTIONS AND ANSWERS

## 1. Is Payment of Prevailing Wage Required?

Yes. Any Recipient whose project involves "public works" as the term is defined in defined in Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720, must pay prevailing wages in accordance with the law.

## 2. Does prevailing wage apply to private entities?

Yes. A private entity must pay prevailing wage under California law if the project involves public works.

## 3. How do I know if my project involves public works?

The California Labor Code beginning at section 1720 deals with this issue. Labor Code sections 1720 and 1771 define public works as:

- Construction (includes work performed during the design and preconstruction phases of construction including but not limited to, inspection and land surveying work).
- Alteration
- Demolition.
- Installation.
- Repair work.
- Maintenance work.

These Labor Code sections can be found online at http://www.leginfo.ca.gov/calaw.html.

Below are some examples (this list is not exhaustive) of the types of activities that typically lead to finding that a project is a public work:

- Cement work such as pouring a cement pad.
- Site preparation such as grading.
- Surveying.
- Electrical work such as wiring.
- Carpentry work.
- Limited inspection activities.

**4. What kind of trades or workers must be paid prevailing wage?**

The California Department of Industrial Relations (DIR) Division of Labor Statistics and Research (DLSR) makes the final determination on which trades and/or workers are covered by prevailing wage laws. DLSR maintains a list of the covered trades/workers that are entitled to prevailing wage for public works commercial construction projects. See www.dir.ca.gov/dlsr/statistics_research.html or call the DLSR Prevailing Wage Hotline (415) 703-4774 for more information about these trades.

Generally, workers such as the following would be covered trades:

- Operating engineer (heavy equipment operator)
- Surveyor
- Carpenter
- Cement Mason
- Electrician
- Laborer

The following types of workers usually would NOT be covered trades entitled to prevailing wage:

- Engineer
- Project superintendent / construction manager / project manager
- Architect
- Planner
- Computer programmer

The above examples are for general information only. If you have questions about whether a worker is in a covered trade requiring payment of prevailing wages, you should check directly with DIR.

**5. What if I am unsure whether my project involves public works and prevailing wage must be paid? How Should I Budget if I am Unsure About Prevailing Wage?**

You are encouraged to determine if your project involves public works as soon as possible. In order to determine if your project is a public work, you will need to contact the California Department of Industrial Relations (DIR). They can be reached at (415) 703-4774. If you do not know whether your project is a public work and you have not obtained a determination from DIR that the project is not a public work, you must budget with the assumption that the project is a public work and comply with the prevailing wage laws, including but not limited to the payment of prevailing wages.

On the budget, please indicate whether your budget includes amounts for the payment of prevailing wage. You must indicate "yes" unless you have received a determination from DIR that the project is not a public work.

If you do not budget for prevailing wage, and it is later determined that the project involves public works and prevailing wage must be paid, you may be liable for damages and penalties. You also cannot later increase your grant award if it is determined that prevailing wages apply and increase project costs higher than budgeted. The amount requested in your proposal is the maximum that will be paid. Any increased costs for payment of prevailing wage must be paid with match funds. The Energy Commission's grant award amount does not change or increase if the applicant's costs increase for any reason.

### 6. How do I get assistance in determining whether the project involves public works?

First, call the DLSR Prevailing Wage Hotline, (415) 703-4774. The Prevailing Wage Hotline can frequently give advice quickly on routine questions. If the Prevailing Wage Hotline is unable to answer your question, you will need to write to the Director of DIR for a coverage determination on whether your project involves public works. You would include all the relevant facts and documents related to the project. DIR regulations, Title 8 California Code of Regulations, section 16001(a)(1), provides that any interested party may file a request with the Director of DIR to determine coverage under the prevailing wage laws. The request can be either for a specific project or type of work to be performed that the interested party believes may be subject to or excluded from coverage as public works under the Labor Code. The full text of DIR's regulations can be found at: http://ccr.oal.ca.gov, (Title 8, Division 1, Chapter 8, Subchapter 3, Article 2). Send requests for a coverage determination to:

Department of Industrial Relations
Office of the Director
455 Golden Gate Avenue
San Francisco CA 94102

### 7. How long will it take to get an answer?

We do not know, but hope that the question can be asked and answered informally and quickly through the Prevailing Wage Hotline. If you need to submit a request to the Director of DIR, it will take longer to get a coverage determination.

**8. What happens if I make a request to DIR but do not have a decision, or am still unsure whether prevailing wage must be paid, by the time the Energy Commission makes an award at a business meeting, or by the time I execute the grant agreement?**

In this case, the Energy Commission would execute a grant agreement with a budget that assumes prevailing wage is required. If the Recipient, prior to performing the activities in question, then receives a determination from DIR that the project is not a public work, then the Energy Commission can execute an amendment with the Recipient to decrease the budget accordingly. The prevailing wage terms and conditions can also be removed.

**9. What if I submit a proposal to the Energy Commission with a project that I say is not a public work, and the Energy Commission believes that it might be a public work? How would we resolve our differences?**

We would request that you first call the Prevailing Wage Hotline. If you do not receive an answer, we would request that you write a letter to DIR and ask DIR to make the decision. If DIR says the project is a public work, then you will need to pay prevailing wages. If you do not obtain a DIR determination that the project is not a public work requiring the payment of prevailing wage, then you must assume that the project is a public work and comply with the prevailing wage laws, including paying prevailing wages.

**10. If my project is a public work, how do I know what prevailing wages are required in order to prepare a budget?**

If your project is a public work, please submit your budget with the applicable prevailing wage for each trade entitled to prevailing wage as determined by DLSR. For prevailing wage rate information for commercial projects, see www.dir.ca.gov/dlsr/statistics_research.html or call the Prevailing Wage Hotline (415) 703-4774. If your project involves residential construction, the rates are not listed on DIR's website, and you must call the DLSR Prevailing Wage Hotline.

**11. What do I do if workers will be used who do not fit neatly into one of the categories on the DIR website?**

Contact DLSR and describe the type of trade you anticipate will be required in your project and ask whether there is an existing prevailing wage already set by DLSR.

**12. Does prevailing wage apply to a public entity that performs project work with its own employees?**

No.

**13. If my project is considered a public work, then are there any special requirements?**

Yes. For example, the grantee must make sure that covered workers are paid prevailing wage. There are other requirements, such as keeping payroll records, complying with working hour requirements, and apprenticeship obligations. See the Labor Code and the sample terms and conditions, Special Condition regarding Prevailing Wage.

# ATTACHMENT K

# PREVAILING WAGE SPECIAL CONDITION

## Public Works and Payment of Prevailing Wage

### A. Recipient/General Requirements

1. Recipient shall comply with state prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720 and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, for any "public works" (as that term is defined in the statues) performed on the Project funded by this Agreement. For purpose of compliance with prevailing wage law, the Recipient shall comply with provisions applicable to an awarding body. Compliance with state prevailing wage law includes without limitation: payment of at least prevailing wage as applicable; overtime and working hour requirements; apprenticeship obligations; payroll recordkeeping requirements; and other obligations as required by law.

2. Recipient shall certify to the Energy Commission on each Payment Request Form, that prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and that the Recipient and all contractors complied with prevailing wage laws. Prior to the release of any retained funds under this Agreement, the Recipient shall submit to the Energy Commission a certificate signed by the Recipient and all contractors performing public works activities stating that prevailing wages were paid as required by law.

### B. Flowdown Requirements

Recipient shall ensure that all agreements with its contractors to perform work related to this Project contain the following provisions:

1. Contractor shall comply with state prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720; and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, for all construction, alteration, demolition, installation, repair or maintenance work over $1,000 performed under the contract. Contractor's obligations under prevailing wage laws include without limitation: pay at least the applicable prevailing wage for public works activities performed on the Project; comply with overtime and working hour requirements; comply with apprenticeship obligations; comply with payroll recordkeeping requirements; and comply with other obligations as required by law.

2. Contractor shall ensure that the above requirements are included in all its contracts and any layer of subcontracts for activities for the Project.

# ATTACHMENT L

## PREVAILING WAGE COMPLIANCE CERTIFICATE

After the public works[1] activities funded by this Agreement are complete, Recipient must fill out and sign this certificate and obtain the signatures from all of its contractors and any layer of subcontractors involved in public works funded by this Agreement.

***This certificate must be completed and submitted to the Energy Commission Project Manager prior to the release of the retained funds under this Agreement.***

Recipient:

Energy Commission Agreement Number:

Date Public Works Completed:

Recipient hereby certifies as follows:

1. State prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720 and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, has been complied with for the "public works" (as that term is defined in the statues) funded by this Agreement, including payment of at least prevailing wage as applicable; overtime and working hour requirements; apprenticeship obligations; payroll recordkeeping requirements; and other obligations as required by law.

2. All contracts and every layer of subcontracts involving public works funded by the above-referenced Agreement contained requirements that the contractor or subcontractor comply with prevailing wage law and pay prevailing wages in accordance with the requirements of the Labor Code.

3. The contractors and subcontractors have maintained labor records as required by the Labor Code and such records shall be made available upon request.

4. The undersigned Recipient acknowledges that disbursement of the retention by the California Energy Commission is expressly made in reliance upon the representations made in this certification.

[1] Public works is defined in Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720.

***Recipient:***

Signature of Authorized Representative:_____

Printed/Typed Name:

Title:

Date:

Each contractor and subcontractor performing pubic works (e.g., construction, alteration, demolition, installation, repair or maintenance work) for the Project must sign below. Include additional pages if necessary.

Contractors and subcontractors hereby certify as follows:

1. The contract with the Recipient or the Recipient's contractor to perform work funded by the above-referenced Agreement contained requirements that the contractor and all its subcontractors comply with prevailing wage law and pay prevailing wages in accordance with the requirements of the Labor Code.

2. Prevailing wages have been paid as required by law.

3. Contractor and all its subcontractors have maintained labor records as required by the Labor Code and such records shall be made available upon request.

4. The undersigned acknowledges that disbursement of the retention by the California Energy Commission to the Recipient is expressly made in reliance upon the representations made in this certification.

***Construction Contractor #1***

Company Name:

Signature of Authorized

Representative:_____

Printed/Typed Name:

Title:

Date:

***Construction Contractor #2***

Company Name:

Signature of Authorized

Representative:_____

Printed/Typed Name:

Title:

Date:

***Construction Contractor #3***

Company Name:

Signature of Authorized Representative:_____

Printed/Typed Name:

Title:

Date:

***Construction Contractor #4***

Company Name:

Signature of Authorized Representative:_____

Printed/Typed Name:

Title:

Date:

***Construction Contractor #5***

Company Name:

Signature of Authorized Representative:_____

Printed/Typed Name:

Title:

Date:

***Construction Contractor #6***

Company Name:

Signature of Authorized Representative:_____

Printed/Typed Name:

Title:

Date:

# ATTACHMENT M

## PREFERENCE POINTS FOR CALIFORNIA-BASED ENTITIES

Pursuant to AB 2267 (Fuentes, 2008), the California Energy Commission's Public Interest Energy Research (PIER) Program must give a priority to "California-based entities" (CBEs) when making awards. To implement this law, the Energy Commission will award preference points if the proposal meets the criteria for a CBE as described below.

An Applicant must meet all of the following to receive CBE preference points:

1. The proposal must include a CBE as either the recipient or a subcontractor. A CBE is a corporation or other business form organized for the transaction of business that:

   - Either has its headquarters or an office in California AND
   - Substantially manufactures the product or substantially performs the research within California that is the subject of the award.

2. The budget must show that the CBE(s) will receive 50% or more of the PIER funds awarded.

   - If the CBE is the prime recipient, then this means that no more than 50% of the awarded PIER funds can be subcontracted to non-CBEs.
   - The 50% applies to the PIER funds and does not include the match funding. For example, if a proposal has a PIER budget of $100,000, then regardless of how much match funding is pledged, the budget must show $50,000 or more in PIER funds going to CBEs.
   - The 50% requirement can be made up of multiple CBEs. For example, a proposal in which a prime recipient CBE will receive 25% of PIER funds and a subcontractor CBE will receive 25% of PIER funds, meets this 50% requirement.

3. The proposal must receive a passing score prior to any preference points being added.

The preference points will be awarded as follows:

| ***Technical Score (prior to preference points being added)*** | ***Additional Points*** |
|---|---|
| 105-113 | 1.5 |
| 114-122 | 3 |
| 123-131 | 4.5 |
| 132-140 | 6 |
| 141-150 | 7.5 |

The total possible points, not counting any preference points, for this solicitation is 150. The minimum passing score is 105 points. Each proposal that has a score of 105 points or more and qualifies for this preference will receive additional points based on the table above.

Applicants wanting to qualify for these preference points must fill out the attached form. Otherwise eligible Applicants who do NOT submit the attached form with the proposal shall NOT be eligible for the CBE preference points.

# ATTACHMENT N

## CBE PREFERENCE POINTS QUESTIONNAIRE

[The CBE preference points questionnaire is a separate Microsoft Word document that can be accessed at www.energy.ca.gov/contracts as part of this solicitation package. Eligible Applicants must request these preference points by completing and submitting this questionnaire for each CBE contained in the proposal.]